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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,792	02/24/2004	Robert G. Turcott	A04P3001-US1	3760

24473 7590 03/19/2007  
STEVEN M MITCHELL  
PACESETTER INC  
701 EAST EVELYN AVENUE  
SUNNYVALE, CA 94086

EXAMINER
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HOLMES, REX R

ART UNIT	PAPER NUMBER
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3762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/786,792

Applicant(s)

TURCOTT, ROBERT G.

Examiner

Rex Holmes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 8-9, 14-18 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Bornzin (U.S. Pat. 5,891,176).
4. Regarding claims 1 and 14, Bornzin discloses monitoring the patients heart rate (Col. 7, ll. 5-10), determining correct pacing interval for each of a plurality of different heart rates (Col. 8, ll. 33-38), storing the information and hemodynamic response, determining a preferred pacing interval based on the stored information automatically without human interaction (Col. 4, ll. 21-30).
5. Regarding claim 2 and 15, the optimal pacing regime differs based on activity and the parameters are continually changed based on the performance volume which is derived from the heart rate (e.g. Col. 8, ll. 45-50).
6. Regarding claims 3 and 16, the optimization routine can be done every hour or every day (e.g. Col. 8, ll. 56-60).

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7. Regarding claims 4 and 17, information is stored for each range (e.g. Col. 9, ll. 57-65).
8. Regarding claims 5 and 18, parameters are updated and fine tuned to achieve hemodynamically optimal performance (e.g. Col. 6, ll. 60-67).
9. Regarding claims 8 and 21, Bornzin discloses that each time the performance surface occurs it is updated and this does not have to occur continuously (e.g. Col. 4, ll. 21-30).
10. Regarding claims 9 and 22, Bornzin discloses that the stored values are relative to measures corresponding to hemodynamic performance (e.g. Col. 4, ll. 21-30).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 6-7 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bornzin as applied to claim 1 above, and further in view of Salo et al. (U.S. Pub. 2001/0031993 hereinafter "Salo").
13. Bornzin discloses that claimed subject matter as disclosed in detail above, but Bornzin fails to disclose that a plurality of relative measures for each pacing interval are stored. However, Salo discloses that the hemodynamic data is stored in an array and is used to arrive at a particular pacing mode configurations yielding optimum hemodynamic performances (e.g. ¶¶ 60, 90).

14. Claims 10-13 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bornzin as applied to claims 1 and 14 above, and further in view of Carlson (U.S. Pat. 6,366,811).

15. Bornzin discloses a hemodynamically optimal pacing system as described in detail above, and further discloses that it utilizes an accelerometer and hemodynamic data to determine motion (Col. 7, ll. 52-55), but Bornzin does not specifically disclose that when significant motion is present that it either stops pacing and/or storing information that correlates to the pacing. However, Carlson discloses a pacemaker with a hemodynamic pulse pressure sensor that utilizes an accelerometer and threshold values to determine motion so that measurements can be taken during relative steady states of hemodynamic conditions to minimize motion artifacts (Carlson, Col. 3, ll. 4-12 & Col. 7, ll. 17-21). Regarding claims 10-13 and 23-26, It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Bornzin with the motion sensing techniques of Carlson in order to minimize motion artifacts in the signal.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rex Holmes whose telephone number is 571-272-8827. The examiner can normally be reached on M-F 8:00 - 5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on 571-272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rex Holmes  
Examiner  
Art Unit 3762



George Evanisko  
Primary Examiner  
Art Unit 3762

2/15/12